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Medical Information

Control of Hypertension in a Medium-Sized Community

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MODERN ANTIHYPERTENSION THERAPY clearly reduces morbid events.[1-3] National programs against hypertension appear to be working. Two thirds of all persons with hypertension are now aware of their disease and the percentage of patients on adequate therapy has doubled in the past six years. There has been a 50 percent increase in the number of visits to physicians for reasons related to hypertension. Deaths from hypertensive disease are on the decline; stroke and heart disease, which are known to be linked to high blood pressure, continue to decline at a much sharper rate than other categories of cardiovascular disease not related to hypertension. Moreover, mortality rates from stroke, hypertensive disease and coronary heart disease are declining faster in the younger age groups than in the older groups, underscoring the advantage of aggressive preventive therapy.[4]

Physicians and a well informed public are taking more aggressive attitudes toward treatment. Academic fascination with secondary hypertension in the few is giving way to the more pragmatic approach of treating the many.[5-7] Hypertension can be controlled at a minimum cost and it promises to be a high priority item in a society struggling with health care costs.

This report describes how the prevalence of hypertension was reduced in a medium-sized community. Community and private groups worked together effectively in this effort.

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Methods

Study Area

Whatcom County borders Canada in the northwestern portion of the state of Washington on Puget Sound. Its major city and county seat is the coastal town of Bellingham, population 42,000. Another 51,000 people live in nearby semirural towns, islands and mountainous regions. The people are predominantly Caucasian (98 percent), but include American Indians and Spanish-Americans. Bellingham provides most of the industrial and business activity. Agriculture, fishing, logging and tourism are the other major sources of livelihood in the county.

Community Involvement

The program evolved through several timely occurrences. A physician in private practice was concerned about persons with uncontrolled hypertension who were unaware of their problem. One of our local hospitals was expanding its outpatient services. The hospital offered space, volunteers, supplies, and start-up funds. A staff nurse attended a special hypertension training program geared to nurse practitioners. The hospital planner developed proposals for community involvement. She involved representatives from various community groups including the fire department, school district, Red Cross, hospitals, dietetic association, emergency medical technicians, visiting nurses, community college, council on aging and the health department.

Space, Equipment and Staff

The hypertension clinic was allocated approximately 700 square feet in the basement of the hospital. No significant structural changes were required to accommodate the blood pressure service. Equipment requirements for screening were simple. Standard bladder cuffs (12.5 by 23 cm) with mercury gravity manometers were used. Forms, files and other office supplies cost less than $700.

The clinic is staffed by a physician, a registered nurse, a dietician, a receptionist and unpaid volunteer screeners. The nurse trains the volunteers in techniques of recording blood pressure and of patient guidance and coordinates duty schedules. She oversees the satellite screening stations and maintains a central file of their screening activi-

ties. She also participates in the evaluation and therapy of patients under treatment.

Clinic Structure

The Whatcom County Hypertension Clinic at St. Luke's Hospital began operation as an outpatient service on Thursday, April 24, 1975. The free screening service has always been well received. Approximately 100 persons come to the Thursday 10 AM through 4:30 PM hospital screening each week. Even greater numbers come to our satellite screening sites, which are open on various days at a wider range of hours.

Screening expanded into other community areas including churches, industries, classrooms, city halls, health fairs, and Red Cross and senior citizens' centers. Bellingham firemen screened large numbers of people in their five firehalls. A $3,000 grant by the Washington-Alaska regional medical program supported most of the starting costs and some of the salary of the clinic nurse. Private businesses and persons donated over $400 worth of additional screening equipment as we expanded community activities.

Hundreds of patients found to have hypertension were referred back to their own physicians, while those without a personal physician were treated at the clinic each Thursday afternoon. The hospital dietician was available on referral for a large number of these patients. She involved the spouses in the discussions and paid close attention to followup.

Screening Philosophy

The screening criteria being used for determining the diagnosis of hypertension include the lower or lowest of two or more blood pressure recordings separated by a period of rest. For those 40 years old or less, a diastolic pressure above 90 mm of mercury and for those over 40, a diastolic

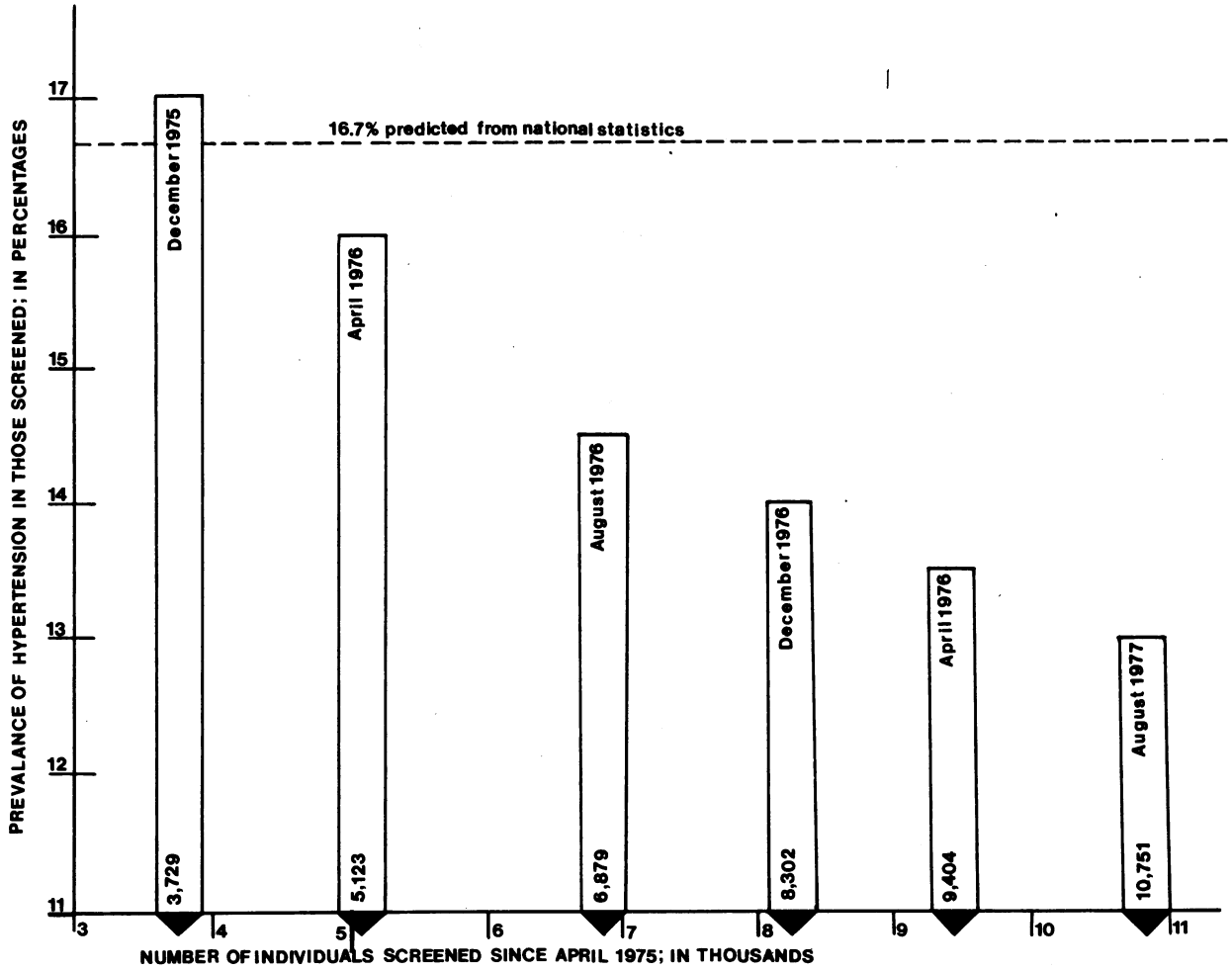

Figure 1.—Prevalence of hypertension in Whatcom County, Washington.

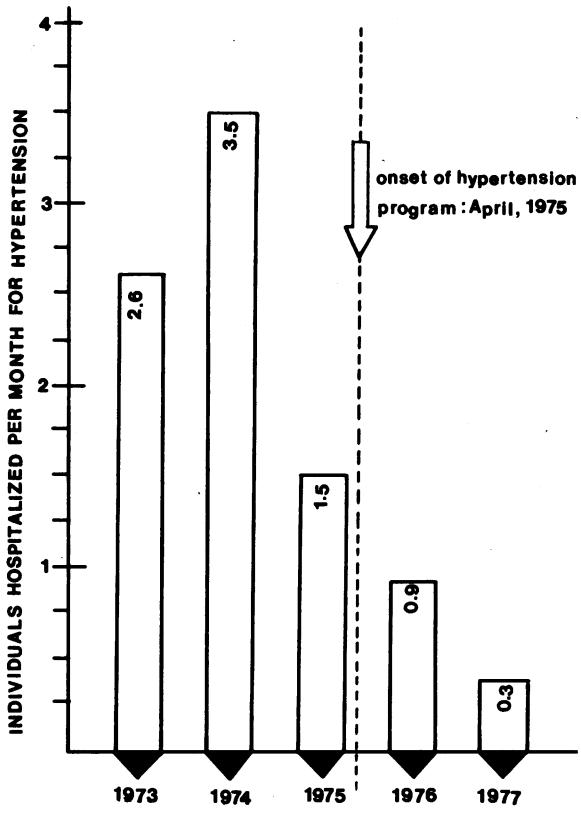

Figure 2.—Average monthly hospital admissions for hypertension to St. Luke's Hospital, Bellingham, Washington.

pressure above 95 mm of mercury are considered hypertensive. Those with normal blood pressures may return in 6 to 12 months for another free recording. In borderline cases, persons may return the following week and as often as necessary to clarify their status. Clearly abnormal results will elicit recommendations for a reasonably prompt check by personal physicians. Patients with severely elevated blood pressure, for example, diastolic pressures greater than 120 mm or 130 mm of mercury, find us assisting them to make an emergency visit to their doctors. Our screeners hand out educational booklets to hypertensive patients, so that they may better understand their disease.

All blood pressure readings are kept on permanent file in our clinic, and the patients are given wallet-sized cards with each of the recordings for their own use. They may give these to their physicians as additional data upon which to base therapeutic decisions.

We counted only persons seen, not numbers of blood pressure recordings. Many of the 10,751 persons have been checked several times in various stations. Duplicate records for the same person have been condensed and counted only once. Only the most recent blood pressure recording is counted in our statistics. People in whom hypertension was shown on earlier screenings and who since have regained normal blood pressure are now counted in the normotensive group. People who become hypertensive or in whom treated hypertension gets out of control are counted in the hypertensive group.

In October 1976 we were given a hypertension profile for our county based on national data from the CIBA Community Hypertension Evaluation Clinic (CHEC). The CHEC program had screened more than 1,000,000 Americans between 1973 and 1975.[8] The CHEC profile for Whatcom County predicted a 16.7 percent prevalence of hypertension, a figure quite close to ours in December 1975.

The declining prevalence of hypertension in our county is shown in Figure 1. The early screening data in December 1975 showed 17 percent of our population to be hypertensive. (Hypertension is defined as a diastolic pressure greater than 90 mm of mercury for those 40 years or younger, and greater than 95 mm of mercury for those over 40 years of age.) By August 1977 the percentage had fallen to 13 percent. If these figures are extrapolated to the total county population, 2,768 previously hypertensive patients are now normotensive.

The number of average monthly admissions to our community hospital before and during the antihypertension program is shown in Figure 2. Only patients admitted with the primary diagnosis of hypertension were counted. In the two years before the existence of an organized program, hospital admissions for hypertension were averaging approximately three per month. However, after April 1975 the hospital admission rate decreased to less than one patient per month.

A number of factors probably contributed to this decline. One was lack of enthusiasm locally for extensive laboratory and roentgenographic evaluation for secondary hypertension. Moreover, early diagnosis and treatment of hypertension prevent the need for hospital admission under crisis conditions. The shift from inpatient to outpatient therapy even for small numbers of patient is clearly a major saving. If such a phenomenon were to occur nationally, the saving could be huge.

Our program continues beyond its third year.

We expect the residuum of hypertension in Whatcom County to continue to decline. We expect heart failure, stroke and hypertensive renal failure to occur less often, and overall survival to increase. Although it is beyond our scope at present, we would welcome a study here to determine these factors.

Comment

Our efforts to control hypertension in a medium-sized community have resulted in a significant decline in the local prevalence of the disease. Emphasis on early identification and therapy avoids vastly more expensive inpatient evaluation and crisis care. The effectiveness of the physician (in private practice) has been increased by using paramedical and volunteer help. The nurse has a major role in decisions regarding entry into the health care process through her direction of a large screening program. The generosity of the volunteer screeners has been notable and stems from their belief in the value of preventive medicine.

We firmly believe that any cost-effective, substantial reduction of cardiovascular disease in our society will begin with a concentrated attack on hypertension. Our program has required a minimum of time and expense. Appreciation from the public and the motivation of the staff have made this endeavor a pleasant one. The ingredients for similar antihypertension programs can be found in most average communities and can be readily duplicated.

Summary

A combined community and private program in Whatcom County, Washington, to detect and treat hypertension is described. A hospital-based outpatient hypertension clinic coordinates screening at multiple sites; provides educational programs, treatment backup and dietetic instruction, and refers most patients who are found to be hypertensive to long-term therapy with their community physicians.

Between April 1975 and August 1977, a total of 10,751 randomly selected persons from the county population of 93,709 was screened. Early data in December 1975 showed a 17 percent prevalence of hypertension, a fairly typical figure for American communities. By April 1977 the prevalence of hypertension had dropped to 13 percent. Furthermore, local hospital admissions for hypertension had declined by 80 percent, resulting in a major cost saving. The ingredients for similar antihypertension programs could be found in most average communities and could be readily duplicated.

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